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Class of emission	Emission designator	Authorized bandwidth (kHz)
*	*	*
*	*	*
¹⁴ The information is contained in multiple very low level subcarriers.		
*	*	*

§ 80.207 Classes of emission.

(a) Authorization to use radiotelephone and radiotelegraph emissions by ship and coast stations includes the use of digital selective calling and selective calling techniques in accordance with § 80.225.

(b) In radiotelegraphy communications employing a modulated carrier the carrier must be keyed and modulated by an audio frequency.

(c) Authorization to use single side-band emission is limited to emitting a carrier;

(1) For full carrier transmitters at a power level between 3 and 6 dB below peak envelope power;

(2) For suppressed carrier transmitters at a power level at least 40 dB below peak envelope power; and

(3) For reduced or variable level carrier:

(i) In the 1600–4000 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1982, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1982, 18±2 dB below peak envelope power.

(ii) In the 4000–27500 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1978, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1978, 18±2 dB below peak envelope power.

(d) The authorized classes of emission are as follows:

Types of stations	Classes of emission
Ship Stations ¹	
Radiotelegraphy:	
100–160 kHz	A1A
405–525 kHz	A1A, J2A
1605–27500 kHz:	
Manual	A1A, J2A

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Types of stations	Classes of emission
DSC	F1B, J2B
NB-DP ¹⁴	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
156–162 MHz ²	F1B, F2B, F2C, F3C, F1D, F2D
DSC	G2B
216–220 MHz ³	F1B, F2B, F2C, F3C, F1D, F2D
1626.5–1646.5 MHz ...	(⁴)
Radiotelephony:	
1605–27500 kHz ⁵	H3E, J3E, R3E
27.5–470 MHz ⁶	G3D, G3E
1626.5–1646.5 MHz ...	(⁴)
Radiodetermination:	
285–325 kHz ⁷	A1A, A2A
405–525 kHz (Direction Finding) ⁸	A3N, H3N, J3N, NON
154–459 MHz: ¹²	A1D, A2D, F1D, F2D, G1D, G2D
2.4–9.5 GHz	PON
14.00–14.05 GHz	F3N
Land Stations ¹	
Radiotelegraphy:	
100–160 kHz	A1A
405–525 kHz	A1A, J2A
1605–2850 kHz:	
Manual	A1A, J2A
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, J2A
4000–27500 kHz:	
Manual	A1A, J2A
DSC	F1B, J2B
NB-DP ¹⁴	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, A2A, F1B, F2B
72–76 MHz	A1A, A2A, F1B, F2B
156–162 MHz ²	F1B, F2B, F2C, F3C, F1D, F2D
DSC	G2B
216–220 MHz ³	F1B, F2B, F2C, F3C, F1D, F2D
Radiotelephony:	
1605–27500 kHz	H3E, J3E, R3E
72–76 MHz	A3E, F3E, G3E
156–470 MHz	G3E
Radiodetermination:	
2.4–9.6 GHz	PON
Distress, Urgency and Safety: ^{9,9}	
500 kHz ¹⁰	A2A and A2B or H2A and H2B
2182 kHz ^{10,11}	A2B, A3B, H2B, H3E, J2B, and J3E
8364 kHz	A2A, H2A
121.500 MHz	A3E, A3X, NON
123.100 MHz	A3E
156.750 and 156.800 MHz ¹³	G3E, G3N
243.000 MHz	A3E, A3X, NON
406.025 MHz	G1D

¹ Excludes distress, EPIRBs, survival craft, and automatic link establishment.

² Frequencies used for public correspondence and in Alaska 156.425 MHz. See §§ 80.371(c), 80.373(f) and 80.385(b). Transmitters approved before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters approved on or after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are approved specifically for each emission designator.

³ Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

⁴ Types of emission are determined by the INMARSAT Organization.

⁵ Transmitters approved prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

⁶ G3D emission must be used only by one-board stations for maneuvering or navigation.

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⁷Frequencies used for cable repair operations. See § 80.375(b).

⁸For direction finding requirements see § 80.375.

⁹Includes distress emissions used by ship, coast, EPIRB's and survival craft stations.

¹⁰On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

¹¹Ships on domestic voyages must use J3E emission only.

¹²For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

¹³Class C EPIRB stations may not be used after February 1, 1999.

¹⁴NB-DP operations which are not in accordance with CCIR Recommendation 625 or 476 are permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f).

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998; 67 FR 48564, July 25, 2002]

EFFECTIVE DATE NOTE: At 68 FR 46963, Aug. 7, 2003, § 80.207 was amended by revising the table in paragraph (d) effective October 6, 2003. For the convenience of the user the revised text is set forth as follows:

§ 80.207 Classes of emission.

	*	*	*	*	*
(d) *	*	*	*	*	
Types of stations	Classes of emission				
Ship Stations ¹					
Radiotelegraphy:					
100–160 kHz	A1A.				
405–525 kHz	A1A, J2A.				
1605–27500 kHz:					
Manual ^{15 16 17}	A1A, J2A, J2B, J2D.				
DSC ¹⁸	F1B, J2B.				
NB-DP ^{14 16}	F1B, J2B, J2D.				
Facsimile	F1C, F3C, J2C, J3C.				
1561–162 MHz ²	F1B, F2B, F2C, F3C, F1D, F2D.				
DSC	G2B.				
216–220 MHz ³	F1B, F2B, F2C, F3C, F1D, F2D.				
1626.5–1646.5 MHz ...	(*)				
Radiotelephony:					
1605–27500 kHz ^{5 16} ...	H3E, J2D, J3E, R3E.				
27.5–470 MHz ⁶	G3D, G3E.				
1626.5–1646.5 MHz ...	(*)				
Radiodetermination:					
285–325 kHz ⁷	A1A, A2A.				
405–525 kHz (Direction Finding) ⁸	A3N, H3N, J3N, N0N.				
154–159 MHz: ¹²	A1D, A2D, F1D, F2D, G1D, G2D.				
2.4–9.5 GHz	P0N.				
14.00–14.05 GHz	F3N.				
Land Stations ¹					
Radiotelegraphy:					
100–160 kHz	A1A.				
405–525 kHz	A1A, J2A.				
1605–2805 kHz:					
Manual	A1A, J2A.				

Types of stations	Classes of emission
Facsimile	F1C, F3C, J2C, J3C.
Alaska-Fixed	A1A, J2A.
4000–27500 kHz:	
Manual ¹⁶	A1A, J2A, J2B, J2D.
DSC ¹⁸	F1B, J2B.
NB-DP ^{14 18}	F1B, J2B, J2D.
Facsimile	F1C, F3C, J2C, J3C.
Alaska—Fixed ^{17 18}	A1A, A2A, F1B, F2B, J2B, J2D.
72–76 MHz	A1A, A2A, F1B, F2B.
156–162 MHz ²	F1B, F2B, F2C, F3C, F1D, F2D.
DSC	G2B.
216–220 MHz ³	F1B, F2B, F2C, F3C, F1D, F2D.
Radiotelephony:	
1605–27500 kHz ^{18 19}	H3E, J2D, J3E, R3E.
72–76 MHz	A3E, F3E, G3E.
156–740 MHz	G3E.
Radiodetermination:	
2.4–9.6 GHz	P0N.
Distress, Urgency and Safety ⁹⁹	
2182 kHz ^{10 11}	A2B, A3B, H2B, H3E, J2B, J3E.
121.500 MHz	A3E, A3X, N0N.
123.100 MHz	A3E.
156.750 and 156.800 MHz ¹³	G3E, G3N.
243.000 MHz	A3E, A3X, N0N.
406–406.1 MHz	G1D.

¹Excludes distress, EPIRBs, survival craft, and automatic link establishment.

²Frequencies used for public correspondence and in Alaska 156.425 MHz. See §§ 80.371(c), 80.373(f) and 80.385(b). Transmitters approved before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters approved on or after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are approved specifically for each emission designator.

³Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

⁴Types of emission are determined by the INMARSAT Organization.

⁵Transmitters type accepted prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

⁶G3D emission must be used only by one-board stations for maneuvering or navigation.

⁷Frequencies used for cable repair operations. See § 80.375(b).

⁸For direction finding requirements see § 80.375.

⁹Includes distress emissions used by ship, coast, EPIRBs and survival craft stations.

¹⁰On 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

¹¹Ships on domestic voyages must use J3E emission only.

¹²For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

¹³Class C EPIRB stations may not be used after February 1, 1999.

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¹⁴NB-DP operations which are not in accordance with ITU-R Recommendation M.625-3, "Direct-Printing Telegraph Equipment Employing Automatic Identification in the Maritime Mobile Service," with Annex, 1995, or ITU-R Recommendation M.476-5, "Direct-Printing Telegraph Equipment in the Maritime Mobile Service," with Annex, 1995, are permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f) of this chapter. ITU-R Recommendations M.476-5 and M.625-3 with Annexes are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of these standards can be inspected at the Federal Communications Commission, 445 12th Street, SW, Washington, DC (Reference Information Center) or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC. The ITU-R Recommendations can be purchased from the International Telecommunication Union (ITU), Place des Nations, CH-1211 Geneva 20, Switzerland.

¹⁵J2B is permitted only on 2000–27500 kHz.

¹⁶J2D is permitted only on 2000–27500 kHz, and ship stations employing J2D emissions shall at no time use a peak envelope power in excess of 1.5 kW per channel.

¹⁷J2B and J2D are permitted provided they do not cause harmful interference to A1A.

¹⁸Coast stations employing J2D emissions shall at no time use a peak envelope power in excess of 10 kW per channel.

¹⁹J2D is permitted only on 2000–27500 kHz.

§ 80.209 Transmitter frequency tolerances.

(a) The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 10⁶ unless shown in Hz.

Frequency bands and categories of stations	Tolerances ¹
(1) Band 100–525 kHz:	
(i) Coast stations:	
For single sideband emissions	20 Hz.
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz.
For all other emissions	100
(ii) Ship stations:	
For transmitters with single sideband emissions approved before November 30, 1977.	20 Hz.
For transmitters with other emissions approved before November 30, 1977.	1000. ⁵
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters approved after November 29, 1977.	20 Hz.
(iii) Ship stations for emergency only:	
For transmitters approved before November 30, 1977.	3000. ⁵
For all transmitters approved after November 29, 1977.	20 Hz.
(iv) Survival craft stations:	
For transmitters approved before November 30, 1977.	5000. ⁵
For transmitters approved after November 29, 1977.	20 Hz.
(v) Radiodetermination stations:	
For all emissions	100.
(2) Band 1600–4000 kHz:	
(i) Coast Stations and Alaska fixed stations:	
For single sideband and facsimile	20 Hz.

Frequency bands and categories of stations	Tolerances ¹
For narrow-band direct-printing and data emissions.	10 Hz. ²
For digital selective calling emissions	10 Hz.
For all other emissions	50.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters	20 Hz.
(iii) Survival craft stations:	20 Hz.
(iv) Radiodetermination stations:	
With power 200W or less	20.
With power above 200W	10.
(3) Band 4000–27500 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile emissions.	20 Hz.
For narrow-band direct printing and data emissions.	10 Hz. ²
For digital selective calling emissions	10 Hz.
For Morse telegraphy emissions	10.
For all other emissions	15.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions.	10 Hz. ²
For transmitters with digital selective calling emissions.	10 Hz. ³
For all other transmitters	20 Hz.
(iii) Survival craft stations:	50 Hz.
(4) Band 72–76 MHz:	
(i) Fixed stations:	
Operating in the 72.0–73.0 and 75.4–76.0 MHz bands.	5.
Operating in the 73.0–74.6 MHz band	50.
(5) Band 156–162 MHz:	
(i) Coast stations:	
For stations licensed to operate with a carrier power:	
Below 3 watts	10.
3 to 100 watts	75. ⁷
(ii) Ship stations	10. ⁴
(iii) Survival craft stations operating on 121.500 MHz.	50.
(iv) EPIRBs:	
Operating on 121.500 and 243.000 MHz.	50.
Operating on 156.750 and 156.800 MHz ⁶ .	10.
(6) Band 216–220 MHz	
(i) Coast Stations:	
For all emissions	5.
(ii) Ship stations:	
For all emissions	5.
(7) Band 400–466 MHz:	
(i) EPIRBs operating on 406.025 MHz	5.
(ii) On-board stations	5.
(iii) Radiolocation and telecommand stations.	5.
(8) Band 1626.5–1646.5 MHz:	
(i) Ship earth stations	5.

¹Transmitters authorized prior to January 2, 1990, with frequency tolerances equal to or better than those required after this date will continue to be authorized in the maritime services provided they retain approval and comply with the applicable standards in this part.

²The frequency tolerance for narrow-band direct printing and data transmitters installed before January 2, 1992, is 15 Hz for coast stations and 20 Hz for ship stations. The frequency tolerance for narrow-band direct printing and data transmitters approved or installed after January 1, 1992, is 10 Hz.